



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/985,927

11/06/2001

Naoki Shibata

P 280416  
T36-140921M/KOH

4555

909 7590 12/19/2002

PILLSBURY WINTHROP, LLP  
P.O. BOX 10500  
MCLEAN, VA 22102

EXAMINER

SEFER, AHMED N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/985,927

Applicant(s)

SHIBATA ET AL.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. The amendment filed on 9/13/02 has been entered.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Tadatomo et al. (JP 7-273367).

Tadatomo et al. disclose in figs. 1-3 a group III nitride compound semiconductor device comprising a substrate on which a first environment division and a second environment division are formed; and a group III nitride compound semiconductor layers 4 formed on said first environment division so as to serve as effective semiconductor layers.

As to claim 6, Tadatomo et al. disclose in fig. 2 a first environment division which is in a state in which a surface of said substrate is exposed before said group III nitride

compound semiconductor layers are formed.

As to claim 7, Tadatomo et al. disclose a second environment division made of a material which prevents said group III nitride compound semiconductors from being grown on said material.

4. Claims 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (JP 7-169715).

Yamada et al. disclose in figs. 1-5 a group III nitride compound semiconductor device comprising a substrate 1 on which a first environment division (unnumbered) and a second environment division 11 are formed; and a group III nitride compound semiconductor layers 2 formed on said first environment division so as to serve as effective semiconductor layers.

As to claim 6, Yamada et al. disclose a first environment division which is in a state in which a surface of said substrate is exposed before said group III nitride compound semiconductor layers are formed.

As to claim 7, Yamada et al. disclose a second environment division made of a material which prevents said group III nitride compound semiconductors from being grown on said material.

As to claim 8, Yamada et al. disclose a second group III nitride compound semiconductor layer 2', which is amorphous or different in crystallinity from said group III nitride compound semiconductor layers grown on said first environment division, is grown on said second environment division.

5. Claims 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Sverdlov

US Patent No. 6,266,355.

Sverdlov discloses in fig. 4 a group III nitride compound semiconductor device comprising a substrate 12 on which a first environment division 33 and a second environment division 32 are formed; and a group III nitride compound semiconductor layers 34 formed on said first environment division so as to serve as effective semiconductor layers.

As to claim 6, Sverdlov discloses a first environment division which is in a state in which a surface of said substrate is exposed before said group III nitride compound semiconductor layers are formed.

As to claim 7, Sverdlov discloses a second environment division made of a material which prevents said group III nitride compound semiconductors from being grown on said material.

Regarding the method of producing the said compound semiconductor device, it reads on a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

### ***Response to Arguments***

6. Applicant's arguments filed in paper no. 5 have been fully considered but they

are not persuasive. Applicant's argument is based on how the said device is formed (product by process) and not on the final structure of the device. And the references cited above do read on the final structure of the claimed device.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. KOIKE et al. (EP 1241702) disclose a GaN system semiconductor with a region having less threading dislocations.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

Application/Control Number: 09/985,927

Page 6

Art Unit: 2826

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS

December 11, 2002

~~NATHAN J. FLYNN~~  
~~SUPERVISORY PATENT EXAMINER~~  
~~TECHNOLOGY CENTER 2800~~